

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/005,481	EL ATA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kandasamy Thangavelu	2123	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to September 19, 2005.
2. ☒ The allowed claim(s) is/are 1,3-14 and 16-26.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date <u>21/7/05 &amp; 8/6/02</u></li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____.</li> <li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input checked="" type="checkbox"/> Other <u>Clean copy of allowed claims.</u></li> </ol> |
|---|--|

## **DETAILED ACTION**

### ***Introduction***

1. This communication is in response to the Applicants' communication dated September 19, 2005. Claims 1, 2, 5, 7, 9, 13-15, 18, 20, 22-23 and 25 were amended. Claims 1-26 of the application are pending.

### ***Drawings***

3. The drawings submitted on September 19, 2005 are accepted with the proposed corrections to Figure 10, agreed upon between the Examiner and the Applicants and described in Paragraph 6 below.

### ***Examiner's Amendment***

3. Authorization for this examiner's amendment was given in a telephone conversation by Ms. Mary Lou Wakimura on November 17, 2005.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to the applicants, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Art Unit: 2123

4. In the specification:

Page 1, Lines 4-5, "This application is a continuation-in-part of Application 09/127,191, filed July 31, 1998 which claims the benefit"

has been changed to

-- This application is a continuation-in-part of Application 09/127,191, filed July 31, 1998, currently issued as U.S. Patent 6,311,144 which claims the benefit --

Page 4, Line 5, "Fig. 4 is a flow diagram of multi-layer predictive modeling"

has been changed to

-- Figs. 4A, 4B and 4C are parts of a flow diagram of multi-layer predictive modeling --

Page 4, Line 18, "Fig. 9 is a diagram illustrating a technical architecture design"

has been changed to

-- Figs. 9A and 9B are parts of a diagram illustrating a technical architecture design--

Page 5, Line 3, "Fig. 12 is a diagram illustrating a dynamic business representation"

has been changed to

-- Figs. 12A and 12B are parts of a diagram illustrating a dynamic business representation

--

Page 6, Lines 6-7, "traditional system engineering"

has been changed to

Art Unit: 2123

-- traditional system engineering --

Page 6, Lines 23-25, "entitled "Method and Apparatus for Designing and Analyzing Information Systems Using Multi-Layer Mathematical Models." The entire contents and teachings of which are incorporated herein by reference."

has been changed to

-- entitled "Method and Apparatus for Designing and Analyzing Information Systems Using Multi-Layer Mathematical Models", the entire contents and teachings of which are incorporated herein by reference.--

Page 7, Lines 25-28, "entitled "Method and Apparatus for Designing and Analyzing Information Systems Using Multi-Layer Mathematical Models." The entire contents and teachings of which are incorporated herein by reference."

has been changed to

-- entitled "Method and Apparatus for Designing and Analyzing Information Systems Using Multi-Layer Mathematical Models", the entire contents and teachings of which are incorporated herein by reference.--

Page 10, Line 3, "A<sub>1</sub> is a parameter representing the workload"

has been changed to

-- A<sub>1</sub> is a parameter representing the workload --

Art Unit: 2123

Page 12, Line 6, "information system design"

has been changed to

-- information system design --

Page 19, Lines 3-4, "actual performance metrics are obtained from the prototype in response to different kinds and/or volume of workload"

has been changed to

-- actual performance metrics are obtained from testing the prototype in response to different kinds and/or volume of workload --

5 In the claims:

Replace Claim 1 with:

1. A computer implemented method for developing an information system through multiple development phases, the information system including system architecture, one or more software applications, system hardware and networking components, the method comprising:

at one or more design phases, validating a design of a proposed information system by comparing performance metrics calculated from a predictive model of the design against a set of predefined performance requirements, ensuring that the design satisfies the set of performance requirements at each design phase; and

proceeding to a further construction phase if the design is validated.

Art Unit: 2123

at one or more construction phases, validating a prototype of at least a portion of the proposed information system described in a validated design by:

a) comparing performance metrics calculated from a predictive model of the validated design against actual performance metrics obtained from the prototype;

b) if the performance metrics calculated from the predictive model of the validated design do not conform to the actual performance metrics obtained from the prototype, varying a workload type and volume selected to be applied to both the predictive model and the prototype;

c) repeating steps a) and b) until the performance metrics calculated from the predictive model of the validated design conform to the actual performance metrics obtained from the prototype.

In claim 2:

Cancel claim 2.

Replace Claim 9 with:

9. A method for developing an information system through multiple development phases, the information system including system architecture, one or more software applications, system hardware and networking components, the method comprising:

at one or more construction phases, validating a prototype of at least a portion of a proposed information system constructed from a validated design by:

a) comparing performance metrics calculated from a predictive model of the validated design against actual performance metrics obtained from the prototype;

Art Unit: 2123

b) if the performance metrics calculated from the predictive model of the validated design do not conform to the actual performance metrics obtained from the prototype, varying a workload type and volume selected to be applied to both the predictive model and the prototype;

c) repeating steps a) and b) until the performance metrics calculated from the predictive model of the validated design conform to the actual performance metrics obtained from the prototype.

Replace claim 11:

11. The method of claim 10, further comprising:

modifying the prototype if the calculated performance metrics do not satisfy a set of performance requirements, wherein modifying the prototype comprises scaling the number or kind of components of the design;

validating the modified design by comparing updated performance metrics calculated from a predictive model of the modified design against the set of performance requirements, ensuring that the modified design satisfies the set of performance requirements; and

proceeding to a further development phase if the modified design is validated.

Replace Claim 13 with:

13. The method of claim 1, wherein the calculated performance metrics are used to evaluate tradeoffs in maintaining components that implement services for enhancing quality and robustness of the proposed information system, consistent with business or performance requirements.

Replace Claim 14 with:

14. A system for developing an information system through multiple development phases, the information system including system architecture, one or more software applications, system hardware and networking components, the system comprising:

a computer with:

a processor to execute a program of instructions stored in the memory of the computer;

a memory to store a program of instructions for performing a method for developing an information system through multiple development phases;

a display to display results of multiple development phases;

at one or more design phases, a performance metric calculation module calculating performance metrics from a predictive model of a proposed information system design;

a construction module validating the proposed information system design by comparing the calculated performance metrics against a set of predefined performance requirements, ensuring that the design satisfies the set of performance requirements at each design phase; and proceeding to a further construction phase if the design is validated.

at one or more construction phases, the performance metric calculation module calculating performance metrics from a predictive model of a validated information system design;

a prototype of at least a portion of the proposed information system being constructed from the validated design;

the prototype being validated by:



Art Unit: 2123

a) comparing performance metrics calculated from the predictive model of the validated design against actual performance metrics obtained from the prototype;

b) if the performance metrics calculated from the predictive model of the validated design do not conform to the actual performance metrics obtained from the prototype, varying a workload type and volume selected to be applied to both the predictive model and the prototype;

c) repeating steps a) and b) until the performance metrics calculated from the predictive model of the validated design conform to the actual performance metrics obtained from the prototype.

In claim 15:

Cancel claim 15.

Replace Claim 22 with:

22. A system for developing an information system through multiple development phases, the information system including system architecture, one or more software applications, system hardware and networking components, the system comprising:

at one or more construction phases, a prototype of at least a portion of a proposed information system being constructed from a validated design;

a performance metric calculation module calculating performance metrics from a predictive model of the validated design;

the prototype being validated by:

Art Unit: 2123

a) comparing performance metrics calculated from the predictive model of the validated design against actual performance metrics obtained from the prototype;

b) if the performance metrics calculated from the predictive model of the validated design do not conform to the actual performance metrics obtained from the prototype, varying a workload type and volume selected to be applied to both the predictive model and the prototype;

c) repeating steps a) and b) until the performance metrics calculated from the predictive model of the validated design conform to the actual performance metrics obtained from the prototype.

Replace Claim 24 with:

24. The system of claim 23, further comprising:

the prototype being modified if the calculated performance metrics do not satisfy a set of performance requirements, wherein modifying the prototype comprises scaling the number or kind of components of the design;

validating the modified design by comparing updated performance metrics calculated from a predictive model of the modified design against the set of performance requirements, ensuring that the modified design satisfies the set of performance requirements; and

proceeding to a further development phase if the modified design is validated.

Replace Claim 26 with:

26. The system of claim 14, wherein the calculated performance metrics are used to evaluate tradeoffs in maintaining components that implement services for enhancing quality and

Art Unit: 2123

robustness of the proposed information system, consistent with business or performance requirements.

**A clean copy of the allowed claims is attached.**

***Examiner's Amendment for drawing errors***

6. The following changes to the drawings have been approved by the examiner and agreed upon by applicant: See the agreed upon changes to Fig. 10 indicated by the red marked corrections.

In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

***Reasons for Allowance***

7. Claims 1, 3-14, 16-26 of the application are allowed over prior art of record.

8. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

The closest prior art of record shows:

(1) a computerized design system for designing information systems; the method uses a series of phases involving requirements specifications, preliminary design, detailed design,

Art Unit: 2123

prototype development, prototype testing and implementation of final prototype in delivery environment; the method produces structured specifications using a layered approach; the method uses a design engine for developing conceptual design and detailed design and producing a prototype; the design phases are followed by structured verification and validation; the prototype is revised in a number of cycles; (**Peterson et al.**, U.S. patent 6,327,551);

(2) a performance modeling tool and method permitting the user to define the elements of a distributed system (hosts, networks and response times) and examine the effects on the performance of different distributions of application processes over the system; the user can obtain performance projections for an application process over different distributions of the performance workload; application program design uses performance specification, performance modeling and analysis; performance modeling and analysis identify the features that constrain the performance by representing them in a predictive model; the resource demands of each process in the system such as processor time requirements and requests for services from other processes are quantified and used to define the model; the performance measures predicted include process throughput and response times, process utilizations, device utilizations etc.; a change in model parameters permits the prediction of system performance under modified conditions; the method allows the user to specify hardware configuration; the user can view the hardware configuration and distribution of software components amongst the hardware configuration; the user can modify the hardware configuration; the method of layers is used to obtain the performance estimates of the distributed systems; that method uses one model for software contention and prediction of software contention delays; another model predicts queuing delays at hardware devices; the method combines the results to provide performance

estimates for the system under study; the method assists the user to design an optimal distributed program based on performance characteristics of a selected network; the method provides a tool to be used at the earliest stages of application design for the client server environment, to determine an optimal distribution of processes prior to generating program code (**McDonald et al.**, U.S. Patent 5,881,268); and

(3) a system and method for determining a workload placed on target computer system during execution of a specified computer program; the system receives a set of performance measurements representing the performance of the target computer system during execution of the specified computer program; the system then identifies a plurality of workloads and for each identified workload, uses a model of the target computer system to predict the performance measurements that would result when the identified workload placed on the target computer system is executed; the system selects the identified workload whose predicted performance measurements closely matches the received set of performance measurements, as the determined workload; the system uses the selected workload to predict the performance of the specified computer program on the target system with various different configurations; a appropriate model and an accurate workload can be used to identify bottleneck resources having highest utilization; the method generates modifications to a system resource of a target computer system that would result in improved performance during execution of the specified computer program (**Blake et al.**, U.S. Patent 6,067,412).

None of these references taken either alone or in combination with the prior art of record discloses a computer implemented method for developing an information system through

Art Unit: 2123

multiple development phases, the information system including system architecture, one or more software applications, system hardware and networking components, specifically including:

“at one or more construction phases, validating a prototype of at least a portion of the proposed information system described in a validated design by:

a) comparing performance metrics calculated from a predictive model of the validated design against actual performance metrics obtained from the prototype;

b) if the performance metrics calculated from the predictive model of the validated design do not conform to the actual performance metrics obtained from the prototype, varying a workload type and volume selected to be applied to both the predictive model and the prototype;

c) repeating steps a) and b) until the performance metrics calculated from the predictive model of the validated design conform to the actual performance metrics obtained from the prototype”.

None of these references taken either alone or in combination with the prior art of record discloses a method for developing an information system through multiple development phases, the information system including system architecture, one or more software applications, system hardware and networking components, specifically including:

“at one or more construction phases, validating a prototype of at least a portion of a proposed information system constructed from a validated design by:

a) comparing performance metrics calculated from a predictive model of the validated design against actual performance metrics obtained from the prototype;

Art Unit: 2123

b) if the performance metrics calculated from the predictive model of the validated design do not conform to the actual performance metrics obtained from the prototype, varying a workload type and volume selected to be applied to both the predictive model and the prototype;

c) repeating steps a) and b) until the performance metrics calculated from the predictive model of the validated design conform to the actual performance metrics obtained from the prototype”.

None of these references taken either alone or in combination with the prior art of record discloses a system for developing an information system through multiple development phases, the information system including system architecture, one or more software applications, system hardware and networking components, specifically including:

“at one or more construction phases, the performance metric calculation module calculating performance metrics from a predictive model of a validated information system design;

a prototype of at least a portion of the proposed information system being constructed from the validated design;

the prototype being validated by:

a) comparing performance metrics calculated from the predictive model of the validated design against actual performance metrics obtained from the prototype;

b) if the performance metrics calculated from the predictive model of the validated design do not conform to the actual performance metrics obtained from the prototype, varying a workload type and volume selected to be applied to both the predictive model and the prototype;

c) repeating steps a) and b) until the performance metrics calculated from the predictive model of the validated design conform to the actual performance metrics obtained from the prototype”.

None of these references taken either alone or in combination with the prior art of record discloses a system for developing an information system through multiple development phases, the information system including system architecture, one or more software applications, system hardware and networking components, specifically including:

“at one or more construction phases, a prototype of at least a portion of a proposed information system being constructed from a validated design;

a performance metric calculation module calculating performance metrics from a predictive model of the validated design;

the prototype being validated by:

a) comparing performance metrics calculated from the predictive model of the validated design against actual performance metrics obtained from the prototype;

b) if the performance metrics calculated from the predictive model of the validated design do not conform to the actual performance metrics obtained from the prototype, varying a workload type and volume selected to be applied to both the predictive model and the prototype;

c) repeating steps a) and b) until the performance metrics calculated from the predictive model of the validated design conform to the actual performance metrics obtained from the prototype”.



Art Unit: 2123

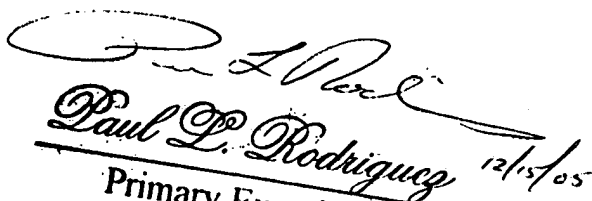
9. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 571-272-3717. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard, can be reached on 571-272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC 2100 Group receptionist: 571-272-2100.

K. Thangavelu  
Art Unit 2123  
November 17, 2005

  
Paul L. Rodriguez 12/15/05  
Primary Examiner  
Art Unit 2125

13/17

